FAST MODEL-BASED OPTICAL PROXIMITY CORRECTION

ABSTRACT

An efficient method and system is provided for computing lithographic images that takes into account vector effects such as lens birefringence, resist stack effects and tailored source polarizations, and may also include blur effects of the mask and the resist. These effects are included by forming a generalized bilinear kernel, which is independent of the mask transmission function, which can then be treated using a decomposition to allow rapid computation of an image that includes such non-scalar effects. Dominant eigenfunctions of the generalized bilinear kernel can be used to pre-compute convolutions with possible polygon sectors. A mask transmission function can then be decomposed into polygon sectors, and weighted pre-images may be formed from a coherent sum of the pre-computed convolutions for the appropriate mask polygon sectors. The image at a point may be formed from the incoherent sum of the weighted pre-images over all of the dominant eigenfunctions of the generalized bilinear kernel. The resulting image can then be used to perform model-based optical proximity correction (MBOPC).